



BioBrief

BONE AND SOFT
TISSUE AUGMENTATION

David E. Urbanek, DMD, MS

Immediate Implant Placement and Provisionalization for Anterior Esthetics

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The Situation

A healthy, 56 year old female presented with fractured, endodontically treated tooth #9. The tooth was fractured at the gingival level and asymptomatic. Both the patient and the restorative dentist had high esthetic expectations, and preferred immediate implant placement with provisionalization if possible.

The Approach

The goals of this case were to: 1) maximize pink and white esthetic scores, 2) preserve the pre-operative soft tissue architecture, 3) minimize hard and soft tissue remodeling over time following tooth extraction, and 4) promote long-term implant health and stability. To achieve these objectives, immediate implant placement with immediate provisionalization was planned. The extraction was performed with minimal flap elevation, and the implant was placed in a guided manner with palatal bias to maximize the facial gap. This gap was then grafted with a slowly resorbing bovine xenograft (Geistlich Bio-Oss Collagen®) to minimize remodeling of the labial bone plate. To further enhance soft tissue volume and contour, the facial soft tissue was augmented after using a Geistlich Fibro-Gide® collagen matrix. Finally, an immediate provisional crown was placed to contain the bone graft and provide support for the soft tissue.

The Risk Profile

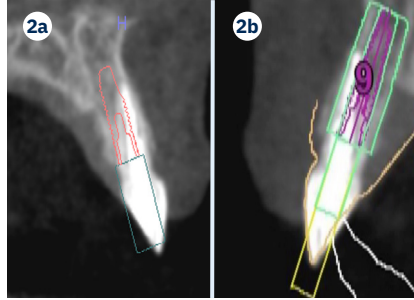
	Low Risk	Medium Risk	High Risk
Patient's health	Intact immune system Non smoker	Light smoker	Impaired immune system
Patient's esthetic requirements	Low	Medium	High
Height of the smile line	Low	Medium	High
Gingival phenotype	Thick - "low scalloped"	Medium - "medium scalloped"	Thin - "high scalloped"
Shape of dental crowns	Rectangular		Triangular
Infection at implant sight	None	Chronic	Acute
Bone height at adjacent tooth	≤ 5 mm from contact point	5.5 - 6.5 mm from contact point	≥ 7 mm from contact point
Restorative status of adjacent tooth	Intact		Restored
Soft-tissue anatomy	Intact		Compromised
Bone anatomy of the alveolar ridge	No defect	Horizontal defect	Vertical defect

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Dr. Urbanek is a board-certified Oral & Maxillofacial Surgeon who practices in St. Louis, Missouri. He completed his OMS training at Carle Foundation Hospital in Champaign/Urbana, Illinois. He earned his Dental Degree from the Case Western Reserve University School of Dental Medicine, and a Master's Degree with Honors in Applied Anatomy from CWRU. Dr. Urbanek serves as adjunct faculty at Carle Foundation Hospital and the A. T. Still University, Missouri School of Dentistry & Oral Health. In addition he avidly lectures to the dental and OMS community throughout the country.

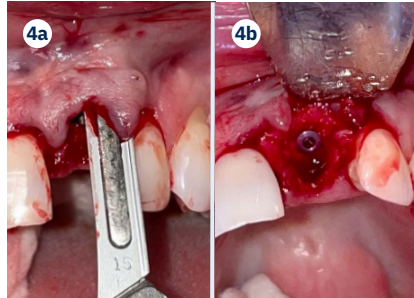
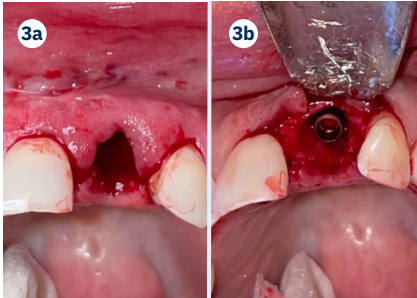


“This was a challenging case in which the patient and her dentist had high esthetic expectations. The goal of this case was to preserve as much of the preoperative anatomy as possible and minimize the inevitable hard and soft tissue remodeling that occurs after a tooth is removed.”



The Outcome

This case finished with excellent pink and white esthetic scores, and the patient and her dentist were very pleased with the results. Most importantly, the implant demonstrated excellent health and stability over one year since placement.



- 1 Pre-operative image showing a fractured, endodontically treated tooth #9.
- 2 Image 2a: Pre-operative sagittal CBCT image demonstrating a Kan Class 1 sagittal root position with initial digital implant planning conducted during the consultation appointment.
Image 2b: Definitive digital implant planning.
- 3 Image 3a: Tooth #9 was extracted with minimal flap elevation, preserving the papillae.
Image 3b: A 3.6 x 15 mm implant was placed in a fully guided manner with a palatal bias to maximize the facial gap dimension, achieving a +2mm gap.
- 4 Image 4a: The underside of the periosteum was incised just apical to the mucogingival junction, and a supra-periosteal pocket was created using sharp dissection with a #15 blade.
Image 4b: The facial gap was packed with 50 mg of Geistlich Bio-Oss Collagen. A cover screw was temporarily placed to prevent bone graft granules from entering the implant chamber.
- 5 Image 5a: A 15mm x 20mm x 3mm Geistlich Fibro-Gide collagen matrix was inserted into the supra-periosteal pocket, with the coronal portion positioned to cover the facial bone crest.
Image 5b: The provisional crown was placed, and the facial mucosal flap was coronally advanced to cover the Geistlich Fibro-Gide collagen matrix.
- 6 Images 6a & 6b: 2-week post-operative follow-up.
- 7 Images 7a & 7b: Final restoration at 16 months post-operative.
- 8 Final restoration with a screw-retained crown at 16 months post-operative.
- 9 Periapical radiograph at 16 months post-operative demonstrating stable crestal bone levels.

“To obtain the best result with challenging cases, such as this one, I always approach them with thorough pre-surgical assessment, proper hard and soft tissue management, and the use of high-quality, evidence-based materials.”

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Keys to Success



- Pre-operative assessment and planning
- Proper selection of Biomaterials
- Proper implant placement
- Bone grafting the facial gap with Geistlich Bio-Oss Collagen®
- Augmenting the facial soft tissue with Geistlich Fibro-Gide® collagen matrix

For more information, please visit:
www.geistlich.us

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<https://www.geistlich-na.com/dental-professionals/instructions-for-use>

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